

WHAT IS CLAIMED IS:

1. A method comprising:
 - storing image data in a multi-plane tiled-surface format, wherein the image data is stored in a first plane and a second plane, the first plane represented by a first set of tiles and the second plane represented by a second set of tiles, wherein a first portion of image data stored in the first plane has a first image data type, and a second portion of image data stored in the second plane has a second image data type, each plane of the multi-plane tiled-surface format being a logical arrangement of tiles representing a plurality of memory pages within memory banks, the tiles arranged such that memory pages of data for sequential retrieval are implemented in different memory banks; and
 - accessing the data in the first plane from top to bottom and the data in the second plane from bottom to top
 - retrieving the data from the memory.
2. The method as in Claim 1, wherein:
 - the step of storing image data includes storing, for each image location in the first plane, a corresponding image location in the second plane
3. The method as in claim 2, wherein an x-y offset of each image location is approximately the same in the first plane as in the second plane.
4. The method as in Claim 1, wherein:
 - the image data is MPEG image data;
 - the first image data type is Y data; and
 - the second image data type is UV image data.

- 1 5. A method comprising:
2 storing a at least a first color component of an image in a first plane of tiled memory;
3 storing at least a second color component of the image in a second plane of tiled memory;
4 reading a first block of data in a first direction, wherein the first block of data represents a
5 portion of the image stored in the first plane of memory; and
6 reading a second block of data in a second direction, wherein the second block of data
7 represents the portion of the image stored in the second plane of memory and the
8 second direction is opposite the first direction.
- 1 6. The method of claim 5, wherein:
2 the step of storing the at least a first color component includes the at least a first color
3 component being luma data; and
4 the step of storing the at least a second color component includes the at least a second
5 color component being chroma data.
- 1 7. The method of claim 6, wherein the amount of chroma data stored is less than the amount
2 of luma data stored.
- 1 8. The method of claim 6, wherein the amount of luma data stored is at least twice the
2 amount of chroma data.
- 1 9. The method of claim 5, wherein an offset to the first block of data within the first plane is
2 approximately the same as an offset to the second block of data within the second plane.

- 1 10. A method comprising the steps of:
2 determining if a block of data having a plurality of lines is at least partially stored in
3 adjacent tiles; and
4 when the block of data is stored in adjacent tiles, accessing portions of the block of data
5 in an adjacent tile having the fewest number of the plurality of lines before
6 accessing portions of the block of data in an adjacent tile having the greatest
7 number of lines.
- 1 11. The method of claim 10, wherein the block of data is image data.
- 2 12. The method of claim 11, wherein the block of data is stored in a format that is compatible
3 with a Motion Picture Expert Group (MPEG) protocol.

- 1 13. A system comprising:
 2 a plurality of memory banks;
 3 an information handling machine to:
 4 store at least a first color component of an image in the plurality of memory banks
 5 as a first plane of tiled memory;
 6 store at least a second color component of the image in the plurality of memory
 7 banks as a second plane of tiled memory;
 8 read a first block of data in a first direction, wherein the first block of data
 9 represents a portion of the image stored in the first plane of tiled memory;
 10 and
 11 read a second block of data in a second direction, wherein the second block of
 12 data represents the portion of the image stored in the second plane of tiled
 13 memory and the second direction is opposite the first direction.
- 1 14. The system of claim 13, wherein:
 2 the at least a first color component is luma data; and
 3 the at least a second color component is chroma data.
- 1 15. The system of claim 14, wherein the amount of chroma data stored is less than the
 2 amount of luma data stored.
- 1 16. The system of claim 14, wherein the amount of luma data stored is at least twice the
 2 amount of chroma data.

- 1 17. The system of claim 13, wherein an offset to the first block of data within the first plane
2 is approximately the same as an offset to the second block of data within the second
3 plane.

- 1 18. A system comprising:
2 an information handling machine coupled to a memory, wherein the information handling
3 machine:
4 accesses at least a portion of the memory as a tiled memory;
5 determines if a block of data having a plurality of lines is at least partially stored
6 in adjacent tiles; and
7 when the block of data is stored in adjacent tiles, accessing portions of the block
8 of data in an adjacent tile having the fewest number of the plurality of
9 lines before accessing portions of the block of data in an adjacent tile
10 having the greatest number of lines.
- 11 19. The system of claim 18, wherein the block of data is image data.
- 12 20. The system of claim 19, wherein the block of data is stored in a format that is compatible
13 with a Motion Picture Expert Group (MPEG) protocol.

- 1 21. A method of accessing a block of data comprising the steps of:
2 storing image data representing an image portion in a multi-plane tiled-surface format,
3 wherein the image data is partially stored in a first plane and partially stored in a
4 second plane, the first plane represented by a first set of tiles and the second plane
5 represented by a second set of tiles, wherein a first portion of image data stored in
6 the first plane has a first image data type, and a second portion of image data
7 stored in the second plane has a second image data type;
8 accessing a first portion of the image data stored in the first plane, wherein the first
9 portion of data is stored in a first tile of the first set of tiles and the first tile is
10 associated with a first bank of memory;
11 accessing a second portion of the image data stored in the first plane after the step of
12 accessing the first portion of the image data, wherein the second portion of the
13 image data is stored in a second tile of the first set of tiles, and the second tile is
14 associated with a second bank of memory; and
15 accessing a third portion of the image data stored in the first plane after the step of
16 accessing the second portion of the image data, wherein the third portion of the
17 image data is stored in the first tile of the first set of tiles.
- 1 22. The method of claim 21 further comprising the step of:
2 rendering the image portion based upon the first, second, and third image data.
- 1 23. The method of claim 21, further comprising the step of:
2 accessing the image data stored in the second plane after the step of accessing the third
3 portion of the image data.

- 1 24. The method of claim 21 further comprising the step of:
2 rendering the image portion based upon the first, second, and third image data after the
3 step of accessing the image data stored in the second plane.

- 1 25. A method comprising the step of:
2 determining that a current image is at least partially stored in a first tile of a first memory
3 bank of a memory and a second tile of a second memory bank of the memory;
4 accessing a portion of the current image in the first tile before accessing a portion of the
5 image in the second tile when a previous memory access was to the second bank
6 of the memory; and
7 accessing a portion of the current image in the second tile before accessing a portion of
8 the image in the first tile when a previous memory access was to the first bank of
9 the memory.